4.12 TRANSPORTATION

This section discusses the potential impacts to transportation in the vicinity of the Tucson Electric Power Company (TEP) Sahuarita-Nogales Transmission Line Project. The discussion includes a description of the methodology of analysis and the impacts for each alternative. Because road use, construction, and closure can impact various resource areas, including biological, cultural, visual, geological, and recreational resources, the potential impacts to these resource areas are addressed in their respective impacts sections.

Methodology

The transportation impact analysis includes the potential effects generated by the construction and operation of the proposed project on transportation in the project area. The analysis is based on review of existing transportation in the project area and project access requirements during construction and operation. The analysis of the Coronado National Forest is supplemented by the Roads Analysis (RA) completed for the proposed project, based on data obtained from the U.S. Department of Agriculture Forest Service (USFS), agency and public input; interpreted from recent aerial imagery; and documented during extensive field reviews (URS 2003a). An RA must be completed for any road construction and reconstruction on national forest land, which would be required for all three proposed corridors. The conclusions of the RA are referenced within this Draft Environmental Impact Statement (EIS), both in the transportation impacts section, and in other applicable resource impacts sections. Construction activities represent the principal means by which an impact on transportation (for example, building of new access roads, closing of existing wildcat roads, or traffic disruption) could occur. Impacts to transportation are determined relative to the context of the affected environment described in Section 3.12.

To determine if an action may cause a significant impact, both the context of the proposed project and the intensity of the impact are considered. The context of the proposed project is the locally affected area between Sahuarita and the U.S.-Mexico border, and the significance depends on the effects in the local area. The intensity of the impact is primarily considered in terms of any unique characteristics of the area (for example, a proposed USFS inventoried roadless area [IRA] or special management area), and the degree to which the proposed project may adversely affect such unique characteristics. Impacts would be significant if the proposed project would change the transportation system permanently, or would have extensive short-term effects during construction.

4.12.1 Western Corridor

The proposed project would be constructed over a period of approximately 12 to 18 months. The construction would require an average construction workforce of 30 individuals, with peak workforce levels reaching 50 individuals for short periods of time. Most workers would come from within Pima and Santa Cruz Counties and would commute on Interstate 19 (I-19) to the three primary points of access: (1) Pima Mine Road in Sahuarita for the South Substation, (2) Arivaca Road exit in Amado for the central access point, and (3) Mariposa Road exit for the southern mobilization yard at the Gateway Substation in Nogales. The average daily traffic numbers for the year 2000 on I-19 at the segment north of Mariposa Road (milepost 2.95) are 18,744 vehicles, at the Arivaca Road exit (milepost 30.95) are 17,919 vehicles, and at the Pima Mine Road exit (milepost 49.62) are 25,271 vehicles (ADOT 2000). The project workforce would add up to 50 vehicles to I-19. Given the temporary and geographically disperse nature of the construction, no significant impact to the existing traffic patterns would be expected and no traffic disruptions on I-19 would occur. Short-term traffic delays may be encountered during construction when the proposed transmission line crosses major roads (such as Arivaca Road). No traffic delays are expected on I-19.

Access to the Western Corridor outside of the Coronado National Forest would be on existing utility maintenance roads, ranch access roads and trails, and new access ways where no access currently exists. Siting of access roads would be coordinated with the affected property owners and land managers to establish the most appropriate access to the structure sites. TEP would use helicopters for stringing conductors, but would not likely use helicopters to bring in poles along the Western Corridor (TEP 2003). On the land managed by the Bureau of Land Management (BLM) west of Sahuarita, an existing access road to TEP's 345-kV Westwing-South transmission line would be utilized by turning off Mission Road, with new 12 ft (3.7 m)-wide access road segments and spur roads to each structure to reduce the area of new disturbance, totaling an estimated 0.9 mi (1.4 km) (an estimated 1.3 acres [0.5 ha] from new access roads and spur roads) in accordance with the Plan of Development (POD) which is being completed concurrently with the EIS. The POD also addresses the revegetation of roads identified to be "retired" following construction, and the gating of roads to prevent off-highway vehicle use. TEP would comply with BLM road closing requirements (TEP 2003).

Within the Tumacacori Ecosystem Management Area (EMA) of the Coronado National Forest, an existing network of Level 2 and wildcat roads would provide access to portions of the Western Corridor, as shown in Figure 3.12–1. Minor spot repairs (such as repairing erosion damage, breaking rocks, removing brush, or reducing a hump) would be required for existing roads including wildcat roads as indicated by the yellow markers on the map. An estimated 95 locations within the Western Corridor would require repair or improvement. Ruby Road and existing wildcat roads would provide some project access as the Western Corridor continues east and joins the El Paso Natural Gas Company (EPNG) pipeline right-of-way (ROW). The new roads that would need to be constructed by TEP for the proposed project are indicated as TEP Proposed Roads in Figure 3.12–1. For the Western Corridor, an estimated 20 mi (32 km) of temporary new roads would be built by TEP for project construction. No roads would be constructed by TEP within an IRA. All proposed roads to structure sites would be amended to the Forest Plan as administratively closed special use roads, and roads to access these maintenance roads would be Level 2 roads. Further, USFS classified roads currently at Level 2 would be reconstructed to Level 3 during construction of the proposed project, but allowed afterwards to revert back to their original level. Proposed roads would be approximately 12 ft (3.7 m) wide. No proposed roads in the Western Corridor would have a slope of over 30 percent (URS 2003a).

TEP utilized the following criteria in the siting of proposed roads and other areas required for the construction, maintenance, and long-term operation of the proposed project (for more detail, see URS 2003a):

- Use existing roads wherever possible.
- Avoid identified biologically and culturally sensitive areas.
- Avoid sediment transport.
- Minimize erosion potential.
- Avoid areas with water features.
- Avoid prominent topographic features.
- Avoid sensitive viewsheds.
- Facilitate road closure.
- Avoid impacting ranching permittees.
- Comply with maximum road slopes.
- Use the most direct route.

- Facilitate roadway obliteration and restoration.
- Comply with roadway geometry standards such as a minimum turning radius.

Table 4.12–1 shows the total new area of land (currently undisturbed) on the Coronado National Forest that would be disturbed during construction activities. In addition to the new proposed roads, this acreage includes support structure sites, transmission wire tensioning and pulling sites, fiber optic splicing sites, and laydown construction yards, as described in Section 2.2. For the Western Corridor, the total new area temporarily disturbed by construction would be an estimated 197 acres (79.7 ha). Table 4.12–1 also indicates the permanent area to be disturbed by the proposed project, which would consist primarily of the footprint of the support structures and roads to fiber-optic splicing sites. For the Western Corridor, the permanent area disturbed would be an estimated 29.3 acres (11.9 ha). The roads that would remain open for use by TEP (administratively controlled special use roads) following construction would be administratively closed (see Section 4.1, Land Use) (URS 2003a).

Table 4.12–1. Temporary and Permanent Area Disturbed on the Coronado National Forest by the Proposed Project.

	Western Corridor (acres)	Central Corridor (acres)	Crossover Corridor (acres)
New temporary area of disturbance during construction	197	105	238
New permanent area of disturbance	29.3	23.1	36.4

Source: URS 2003a.

As described in Section 3.12, the Forest Plan gives direction to "Limit density of existing and new road construction to one mile of road or less per square mile" (0.62 km of road per km^2); USFS has indicated that current road density is estimated to be near this level (USFS 2001). Construction and operation of the proposed project would not affect the road density management plan directives, as TEP is currently working with USFS to identify existing roads for removal, restoration, and permanent closure, such that 1.0 mi (1.6 km) of existing road would be closed for every 1.0 mi (1.6 km) of proposed road to be used in the operation or long-term maintenance of the proposed project. USFS has established principles for identifying high-priority road closure areas including roads within or near specially designated areas (see Figure 3.1–1), roads that cross riparian areas, and wildcat roads. The roads to be closed by TEP would be preliminarily identified by USFS prior to a Record of Decision (ROD), and final determination and documentation of the roads to be closed would be based on field operations with USFS during construction (URS 2003a).

Roads which would not be required for ongoing project maintenance and that are required to be closed by land owners or managers (BLM or USFS) would have boulders, natural impediments, or trenches across the travelway for long-term closure. On the Coronado National Forest, portions of the roadbed would be ripped, obliterated, and reseeded/revegetated in consultation with USFS, especially in the initial visible portion of the roadway to effectively obscure signs of the roadway. To the extent that remnants of closed roadways remain, these could be used by illegal immigrants although they would not provide a single continuous pathway from the U.S.-Mexico border. Revegetation would be limited to species found in the particular biome. These long-term road closure methods would also be applied to roads identified for closure by USFS in the ROD in accordance with road density requirements. Transmission line tensioning and pulling sites, fiber-optic sites, and laydown yard areas would be restored within 6 months of the project becoming fully operational (URS 2003a).

4.12.2 Central Corridor

The Central Corridor would require the same average and peak workforce and approximately the same period of time to construct as the Western Corridor. Also, the primary points of access for mobilization and reporting sites along the Central Corridor would be similar to those for the Western Corridor. Impacts to current traffic patterns from commuting workers would be as described for the Western Corridor.

Access to the Central Corridor would be on existing utility maintenance roads (for example, access to the EPNG pipeline ROW) which would require extensive upgrades, ranch access roads and trails, and new access ways where no access currently exists, as described for the Western Corridor. TEP would use helicopters for stringing conductors, but would not likely use helicopters to bring in poles along the Central Corridor (TEP 2003).

Within the Tumacacori EMA of the Coronado National Forest, an existing network of Level 2 and wildcat roads would provide access to portions of the Central Corridor, as shown in Figure 3.12–1. An estimated 15 locations within the Central Corridor would require repair or improvement. For the Central Corridor, an estimated 13.8 mi (22.2 km) of temporary new roads would be built by TEP for project construction. No roads would be constructed by TEP within an IRA. All proposed roads to structure sites would be amended to the Forest Plan as described for the Western Corridor. An estimated 1 percent of the total mileage of the proposed roads in the Central Corridor would have a slope of over 30 percent (URS 2003a). The criteria utilized by TEP in the siting of proposed roads and other areas required for the construction, maintenance, and long-term operation of the proposed project are as described above for the Western Corridor.

Table 4.12–1 shows the total new area of land (currently undisturbed) on the Coronado National Forest that would be disturbed during construction activities. In addition to the new proposed roads, this acreage includes support structure sites, transmission wire tensioning and pulling sites, fiber optic splicing sites, and laydown construction yards, as described in Section 2.2. For the Central Corridor, the total new area temporarily disturbed by construction would be an estimated 105 acres (42.5 ha). Table 4.12–1 also indicates the permanent area to be disturbed by the proposed project, which would consist primarily of the footprint of the support structures and roads to fiber optic splicing sites. For the Central Corridor, the permanent area disturbed would be an estimated 23.1 acres (9.3 ha). The roads that would remain open for TEP use following construction would be administratively closed, and would be matched within an equal mileage of road closure to avoid affecting road density on national forest land, as described for the Western Corridor (URS 2003a).

Roads which would not be required for ongoing project maintenance and that are required to be closed by land owners or managers would be closed as described for the Western Corridor. These long-term road closure methods would also be applied to roads identified for closure by USFS in the ROD in accordance with road density requirements. Transmission line tensioning and pulling sites, fiber-optic sites, and laydown yard areas would be restored within 6 months of the project becoming fully operational (URS 2003a).

4.12.3 Crossover Corridor

The Crossover Corridor would require the same average and peak workforce and approximately the same period of time to construct as the Western Corridor. Also, the primary points of access for mobilization and reporting sites along the Crossover Corridor would be similar to those for the Western Corridor. Impacts to current traffic patterns from commuting workers would be as described for the Western Corridor.

Access to the currently anticipated alignment of the ROW within the Crossover Corridor would be on existing utility maintenance roads, ranch access roads and trails, and new access ways where no access currently exists, as described for the Western Corridor.

Within the Tumacacori EMA of the Coronado National Forest, an existing network of Level 2 and wildcat roads would provide access to portions of the Crossover Corridor, as shown in Figure 3.12–1. Within Peck Canyon on the segment unique to the Crossover Corridor, existing access is limited to wildcat roads. Helicopter access would be used to bring in 20 to 25 structures in this segment as described in Section 2.2.3. Minor spot repairs would be required for existing roads, including wildcat roads, as indicated by the yellow markers on the map. An estimated 98 locations within the Crossover Corridor would require repair or improvement. For the Crossover Corridor, an estimated 20.7 mi (33.3 km) of temporary new roads would be built by TEP for project construction. Within the IRA, no new roads would be built by TEP, and existing wildcat roads would be used as feasible in their existing condition, but would not be improved. All proposed roads to structure sites would be amended to the Forest Plan as described for the Western Corridor. An estimated 2 percent of the total mileage of the proposed roads in the Crossover Corridor would have a slope of over 30 percent (URS 2003a). The criteria utilized by TEP in the siting of proposed roads and other areas required for the construction, maintenance, and long-term operation of the proposed project are as described above for the Western Corridor.

Table 4.12–1 shows the total new area of land (currently undisturbed) on the Coronado National Forest that would be disturbed during construction activities. In addition to the new proposed roads, this acreage includes support structure sites, transmission wire tensioning and pulling sites, fiber-optic splicing sites, and laydown construction yards, as described in Section 2.2. For the Crossover Corridor, the total new area temporarily disturbed by construction would be an estimated 238 acres (96.3 ha). Table 4.12–1 also indicates the permanent area to be disturbed by the proposed project, which would consist primarily of the footprint of the support structures and roads to fiber-optic splicing sites. For the Crossover Corridor, the permanent area disturbed would be an estimated 36.4 acres (14.7 ha). The roads that would remain open for TEP use following construction would be administratively closed, and would be matched with an equal mileage of road closure to avoid affecting road density on national forest land, as described for the Western Corridor (URS 2003a).

Roads which would not be required for ongoing project maintenance and that are required to be closed by land owners or managers would be closed as described for the Western Corridor. These long-term road closure methods would also be applied to roads identified for closure by USFS in the ROD in accordance with road density requirements. Transmission line tensioning and pulling sites, fiber-optic sites, and laydown yard areas would be restored within 6 months of the project becoming fully operational (URS 2003a).

4.12.4 No Action Alternative

Under the No Action Alternative, TEP would not build the proposed transmission line and associated facilities as proposed in this EIS. There would be no transportation impacts associated with the No Action Alternative. Current traffic patterns and growth of wildcat roads on the Coronado National Forest would be expected to continue.